

A

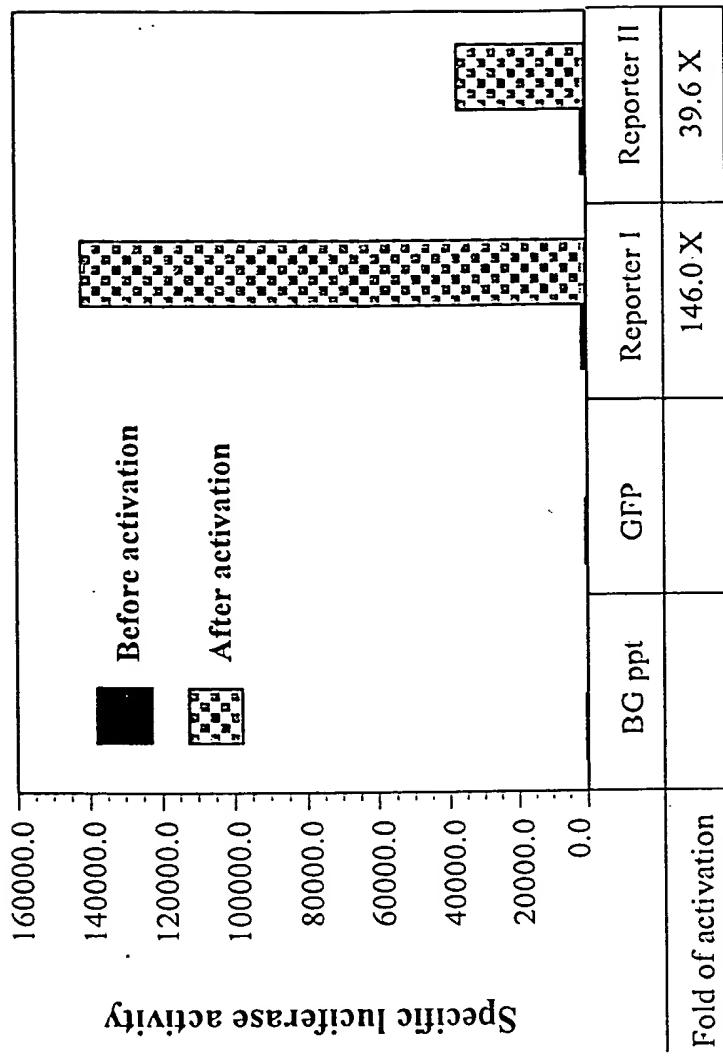
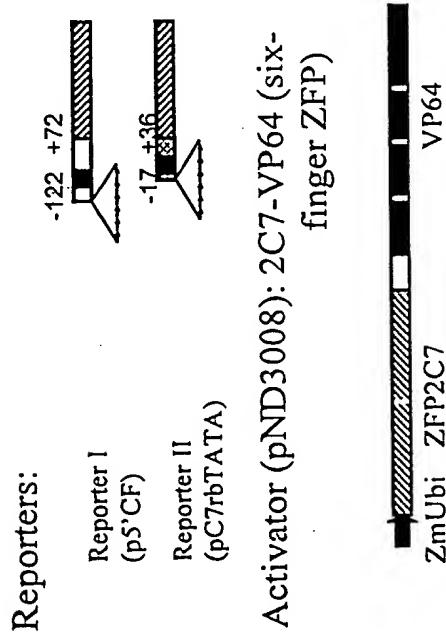


Figure 1

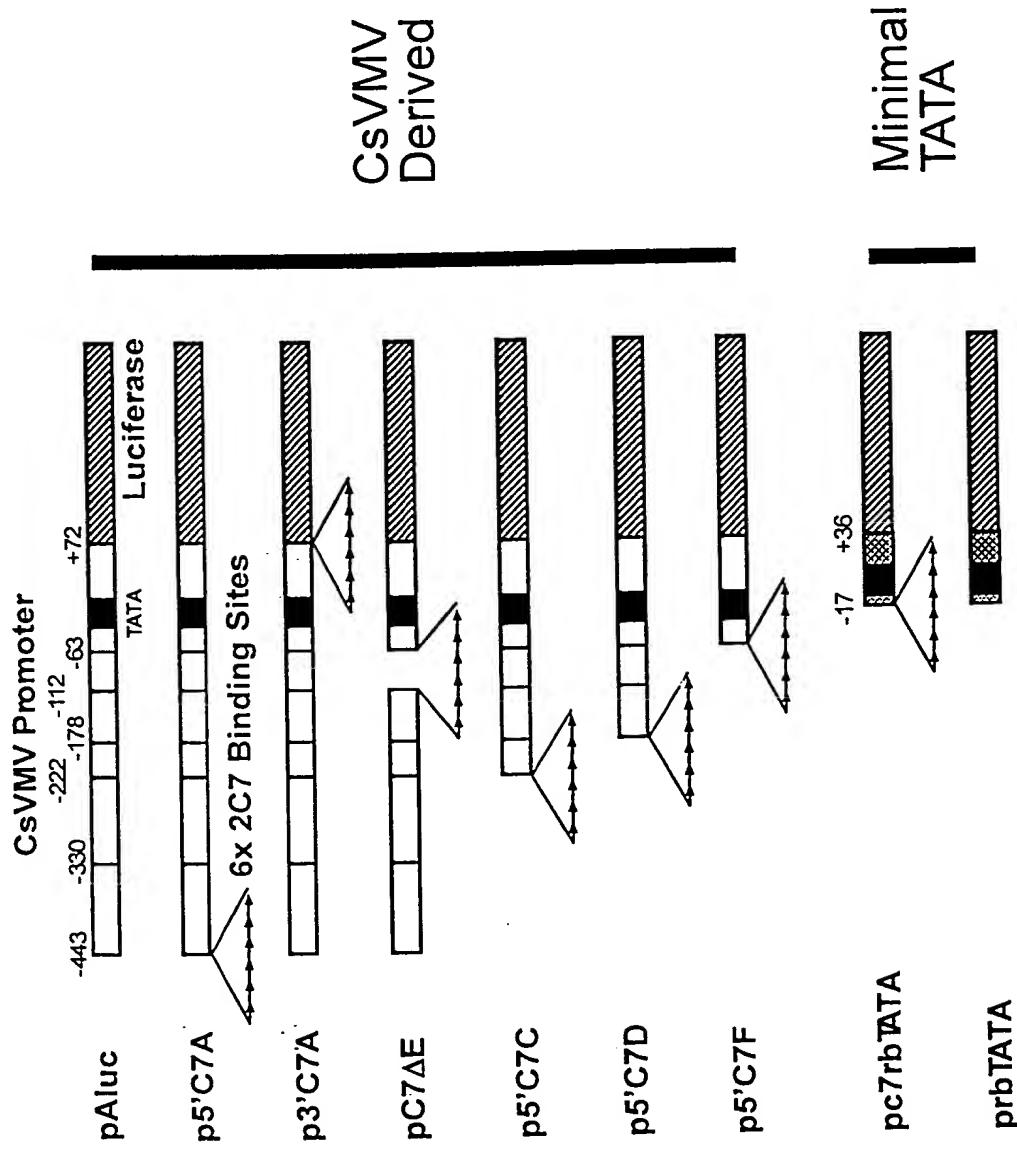


Figure 2

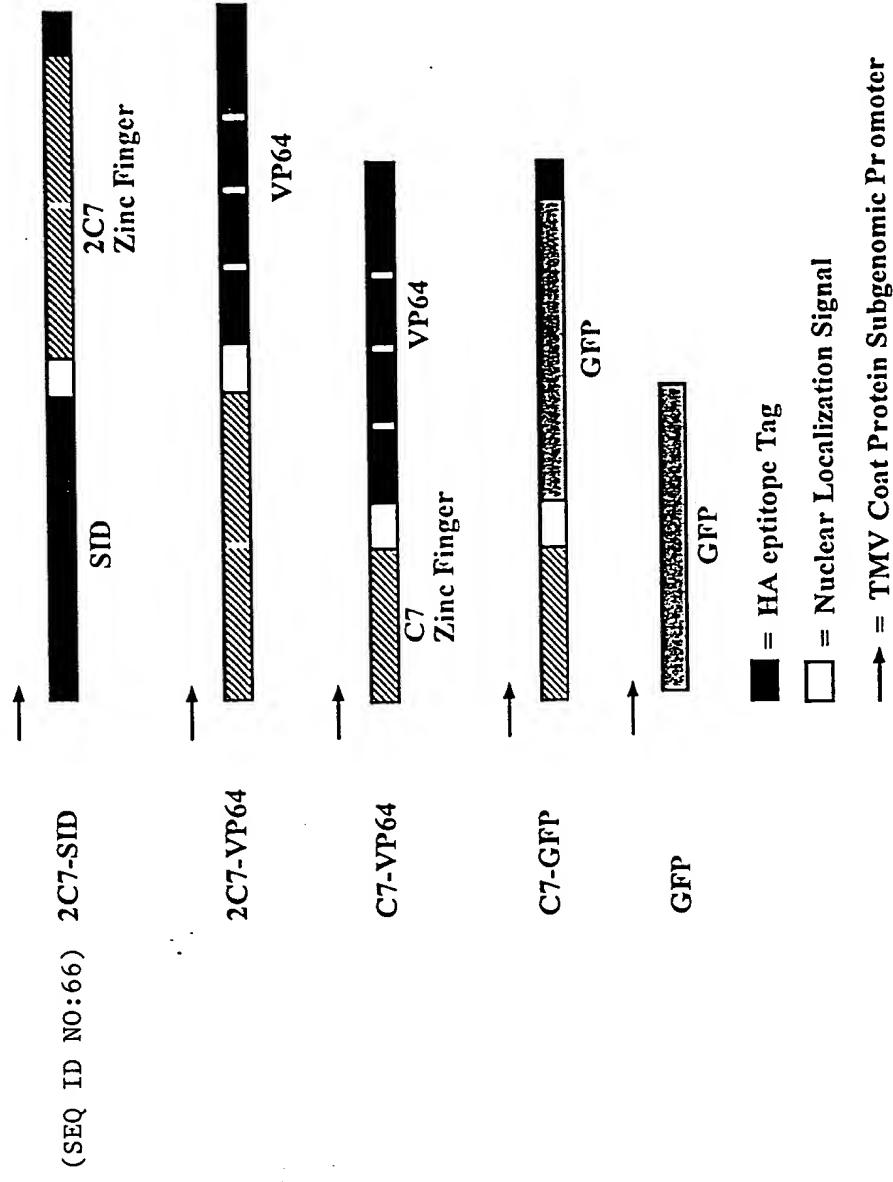


Figure 3

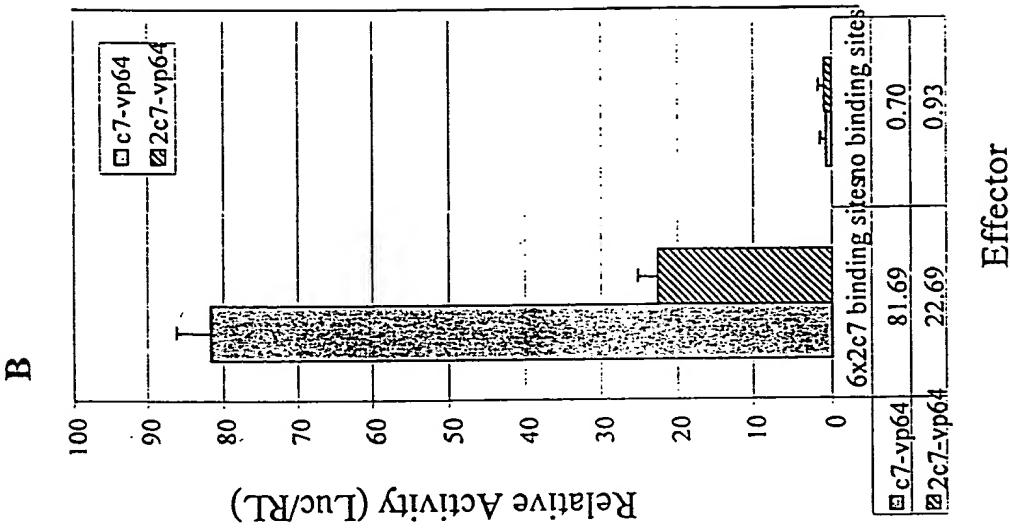
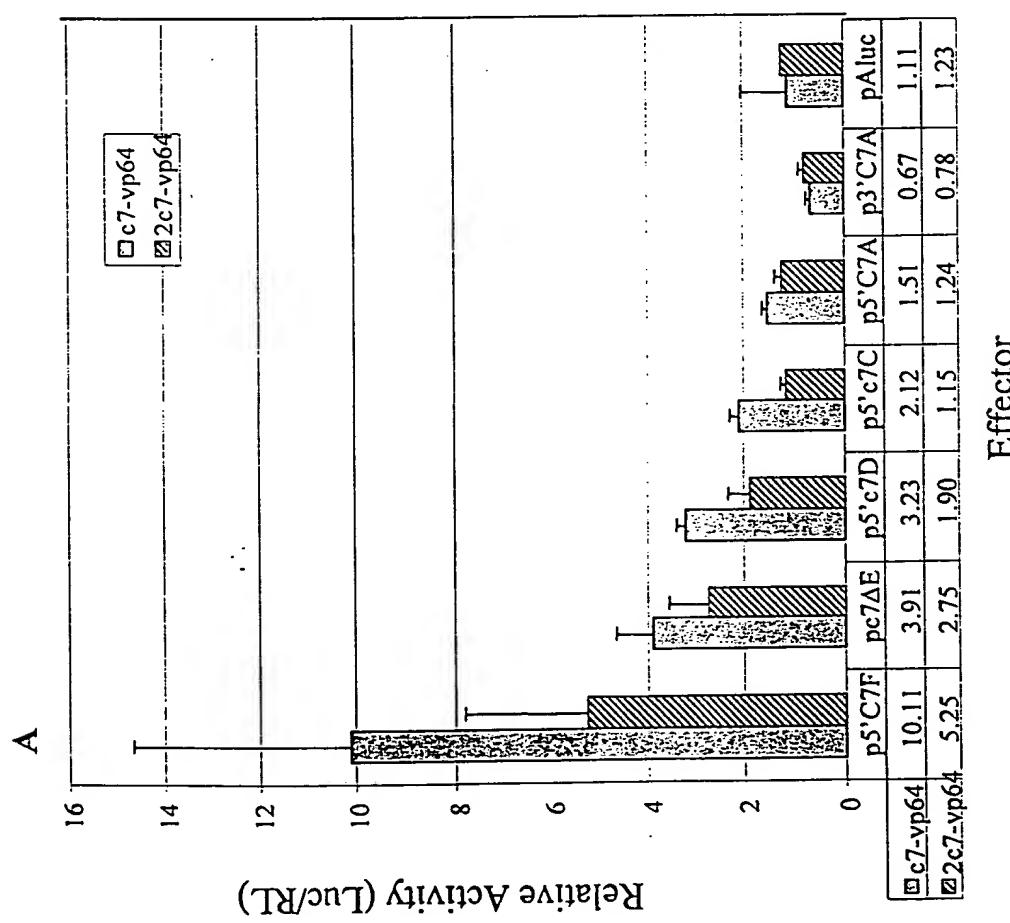
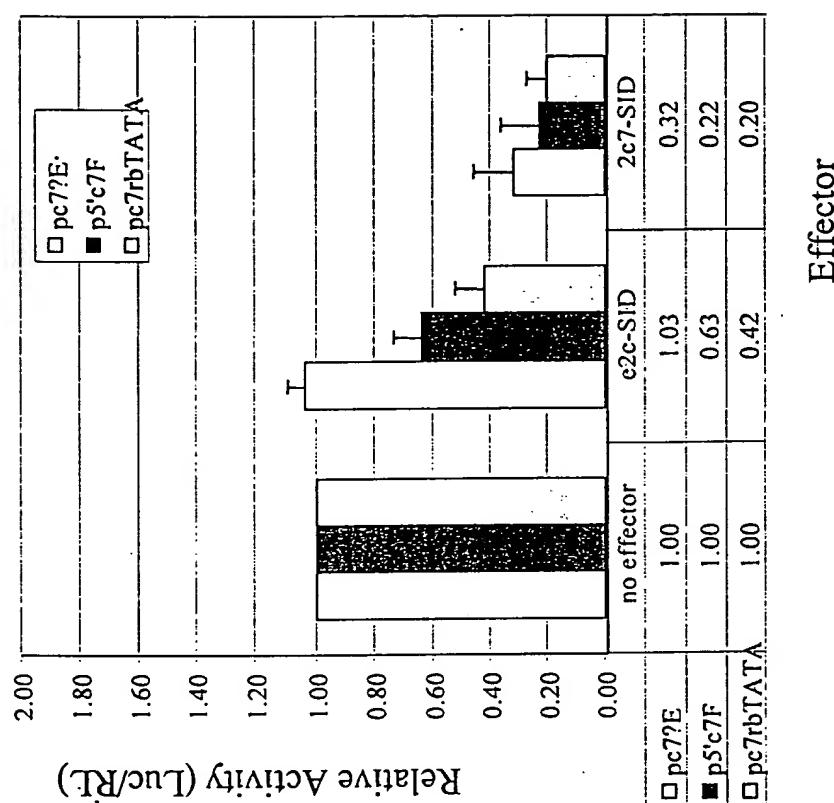


Figure 4

Figure 5



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	F1		
51	QRAHLERHQRTHTGEKPYKCPECGKSFQSSNLVRHQRTHTGEKPYACPE QSSNLVRHQRTHTGEKPYKCPECGKSFSDNLVRHQRTHTGEKPYACPE TSGSSLVRHQRTHTGEKPYKCPECGKSFQSSSLVRHQRTHTGEKPYACPE QSSNLVRHQRTHTGEKPYKCPECGKSFSDCRDLARHQRTHTGEKPYACPE QSSNLVRHQRTHTGEKPYKCPECGKSESSSSLVRHQRTHTGEKPYACPE	150	
	F2		
	F3		
101	CGKSFERSDNLVRHQRTHTGEKPYKCPECGKSFSDNLVRHQRTHTGEK CGKSFERSDNLVRHQRTHTGEKPYKCPECGKSFQAGHLAASHORTHTGEK CGKSFQSSSLVRHQRTHTGEKPYKCPECGKSFSDCRDLARHQRTHTGEK CGKSFQSSSLVRHQRTHTGEKPYKCPECGKSFSDNLVRHQRTHTGEK CGKSFSTSGSSLVRHQRTHTGEKPYKCPECGKSFQSSSHLVRHQRTHTGEK	184	
	F4		
	F5		
151	PYKCPECGKSFQAGHLAASHORTHTGKKTSGQAG ZFPm1 (SEQ ID NO:38) PYKCPECGKSFERSDNLVRHQRTHTGKKTSGQAG ZFPm2 (SEQ ID NO:39) PYKCPECGKSFQSSHLVRHQRTHTGKKTSGQAG ZFPm3 (SEQ ID NO:40) PYKCPECGKSFSTSGHIVRHQRTHTGKKTSGQAG ZFPm4 (SEQ ID NO:41) PYKCPECGKSFSTSGNIVRHQRTHTGKKTSGQAG ZFPAP3 (SEQ ID NO:42)	184	
	F6		

Figure 6

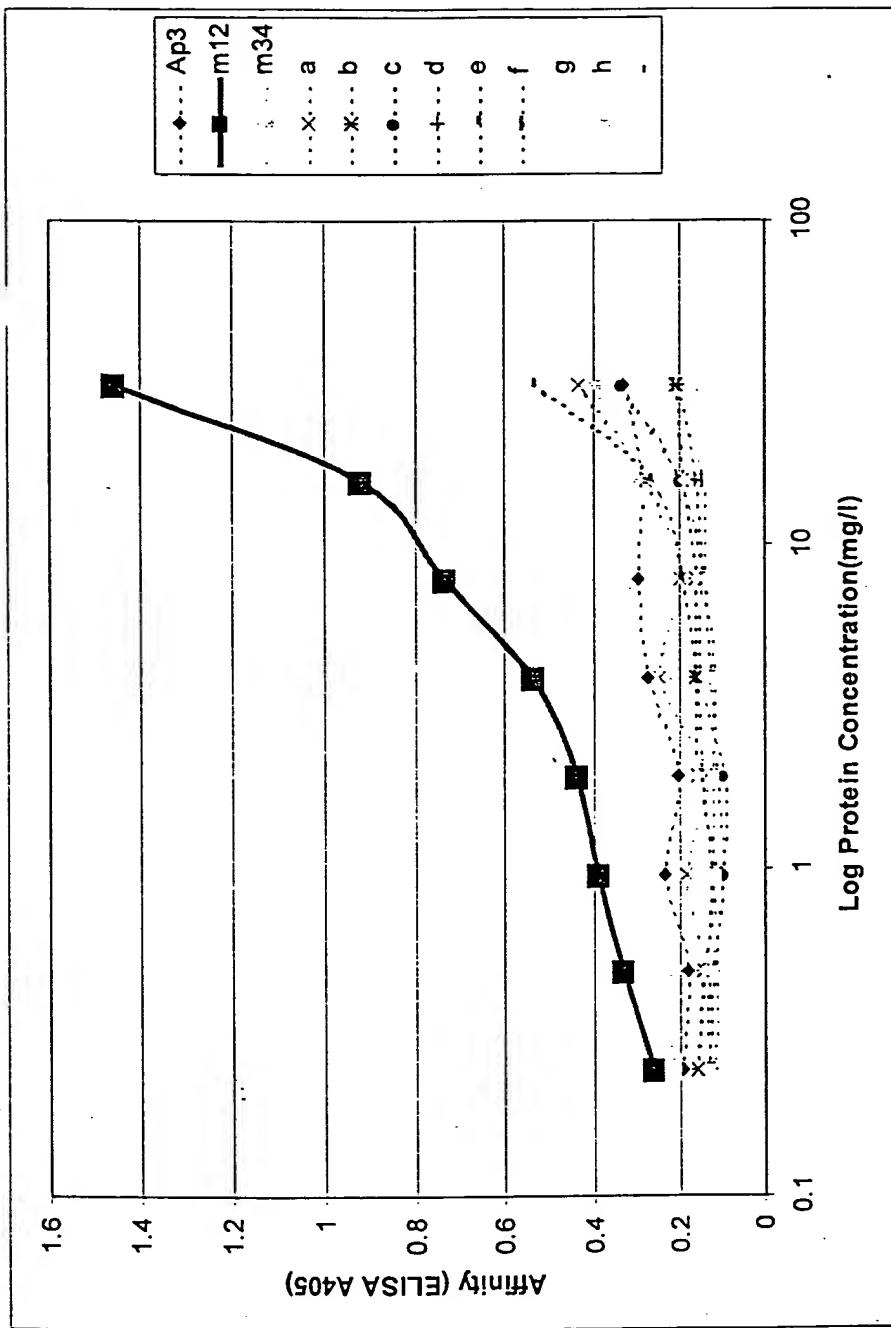
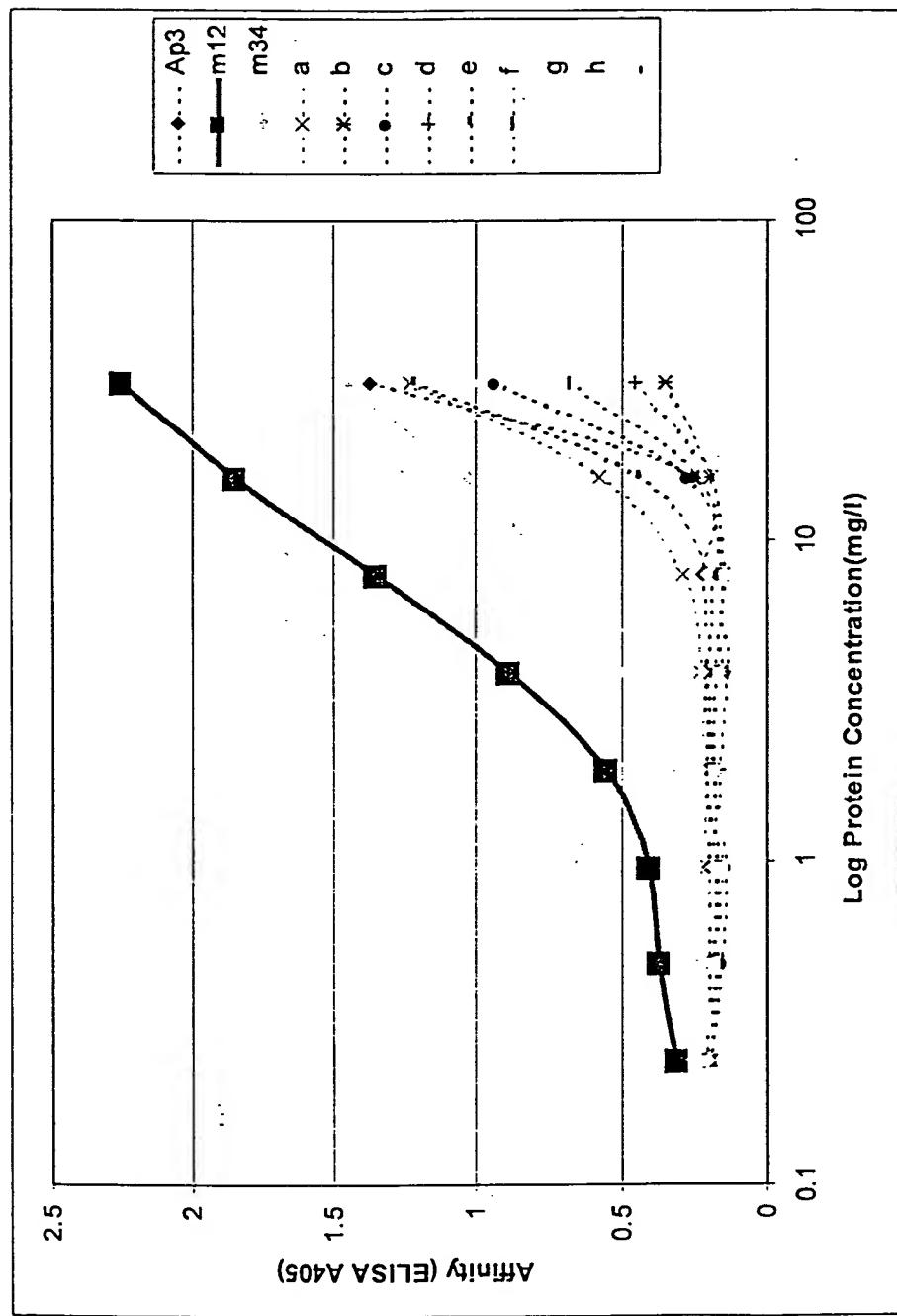


FIGURE 7

FIGURE 8



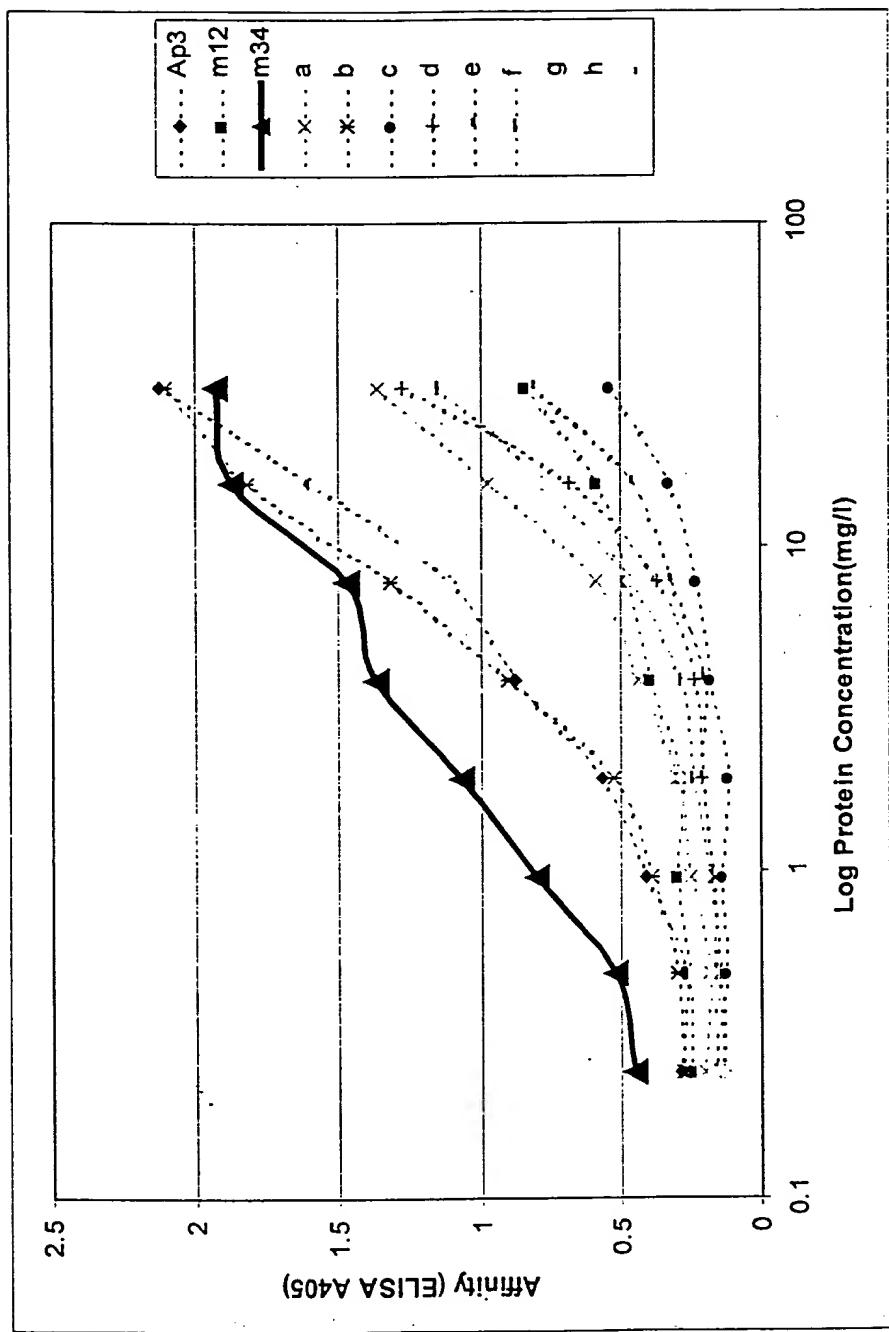


FIGURE 9

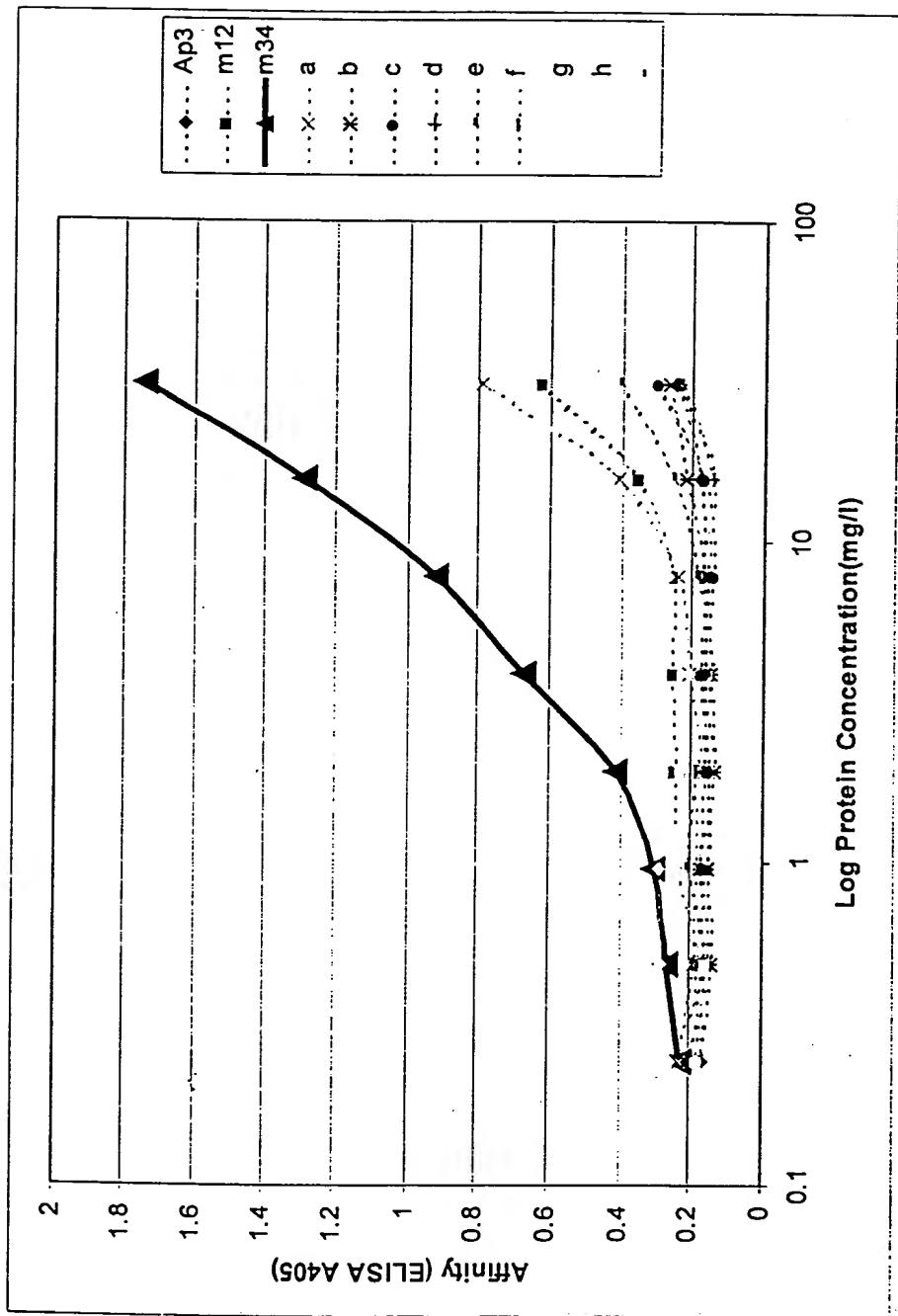


FIGURE 10

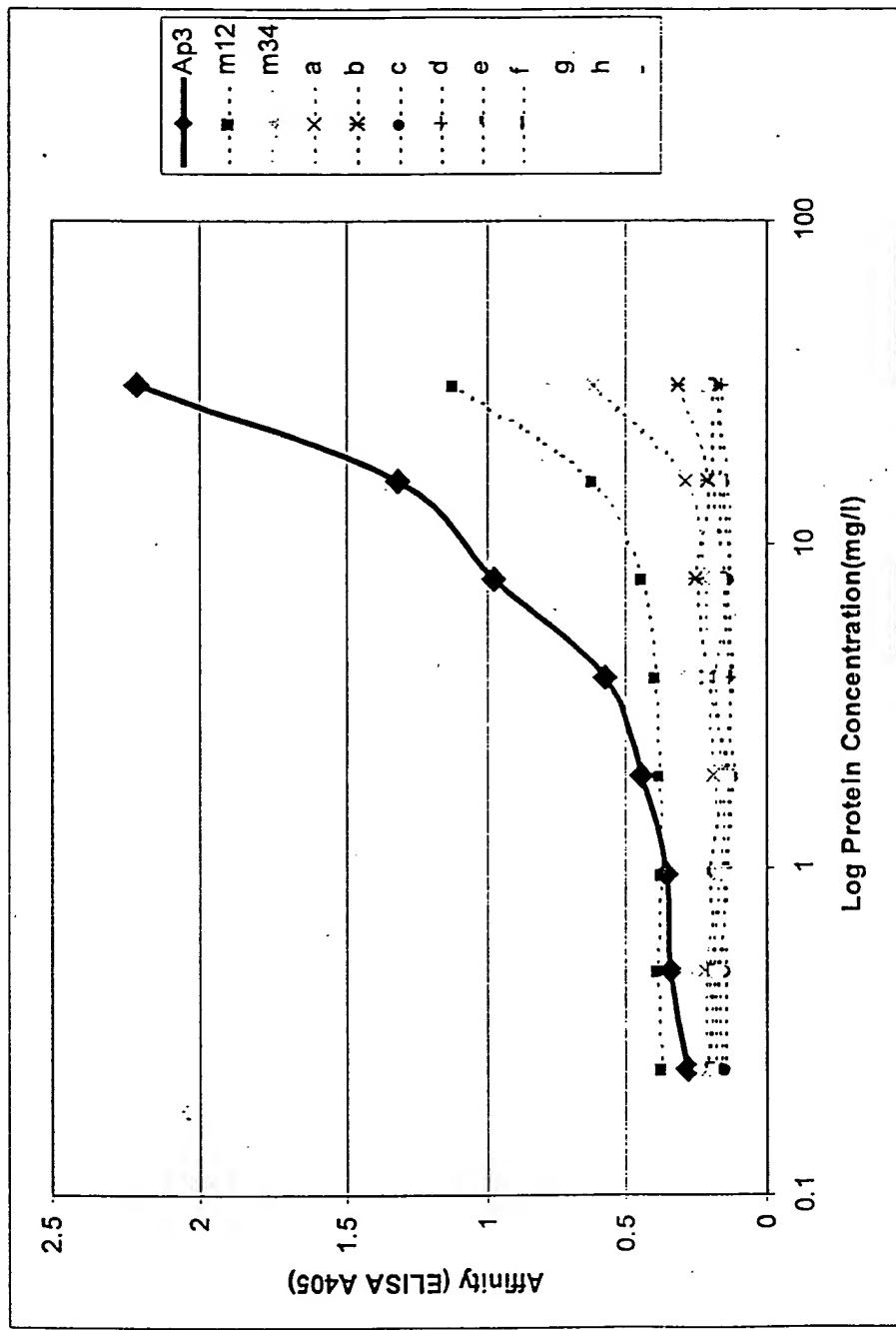


FIGURE 11

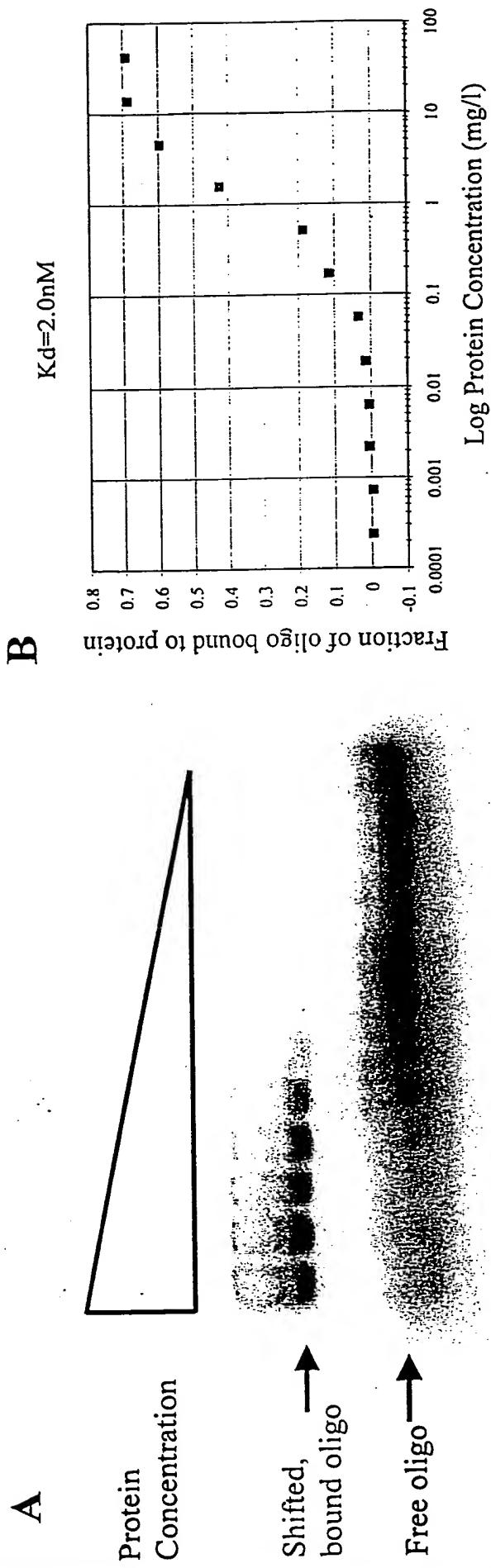


FIGURE 12

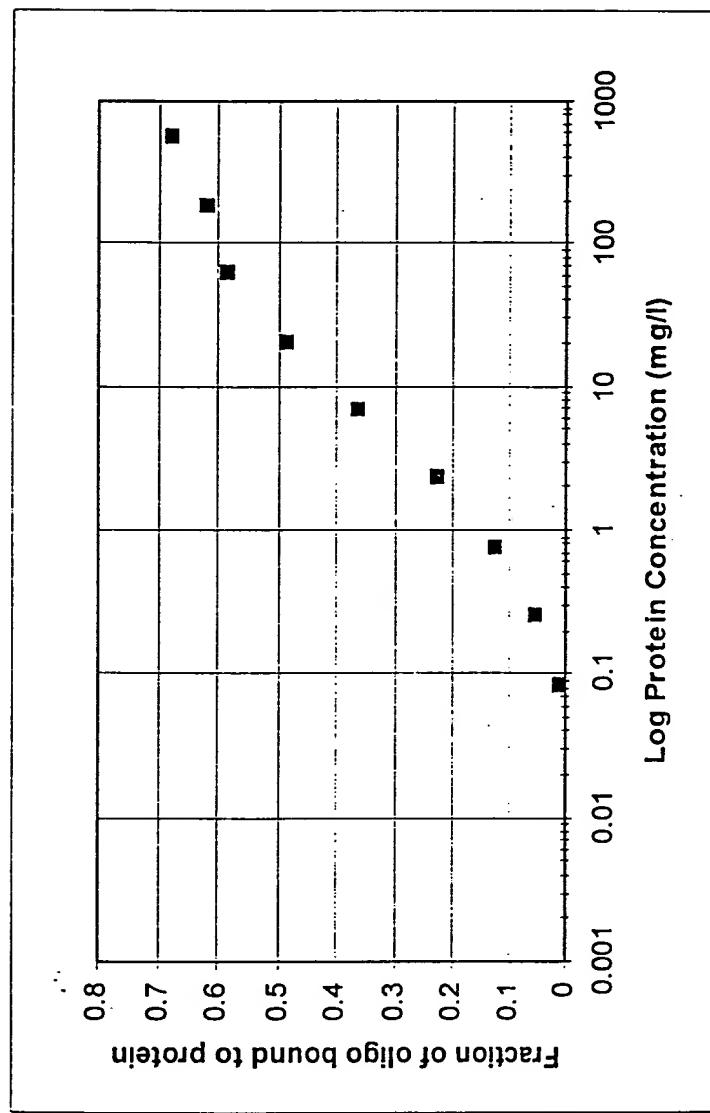


FIGURE 13

FIGURE 14

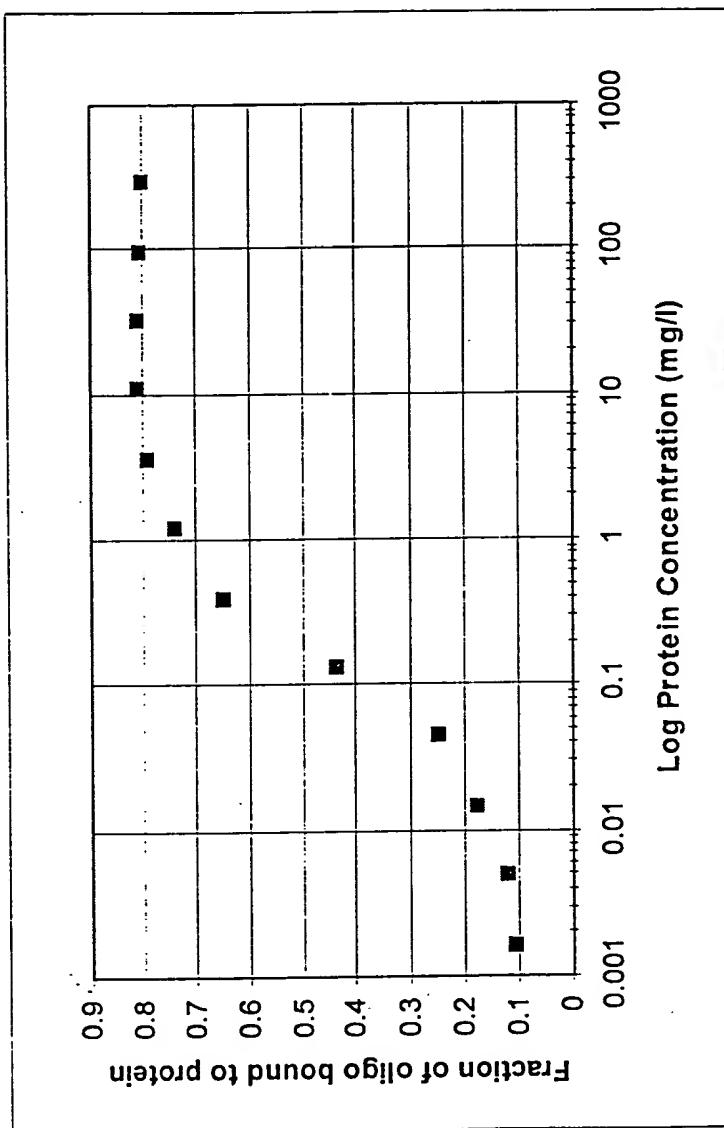


FIGURE 15

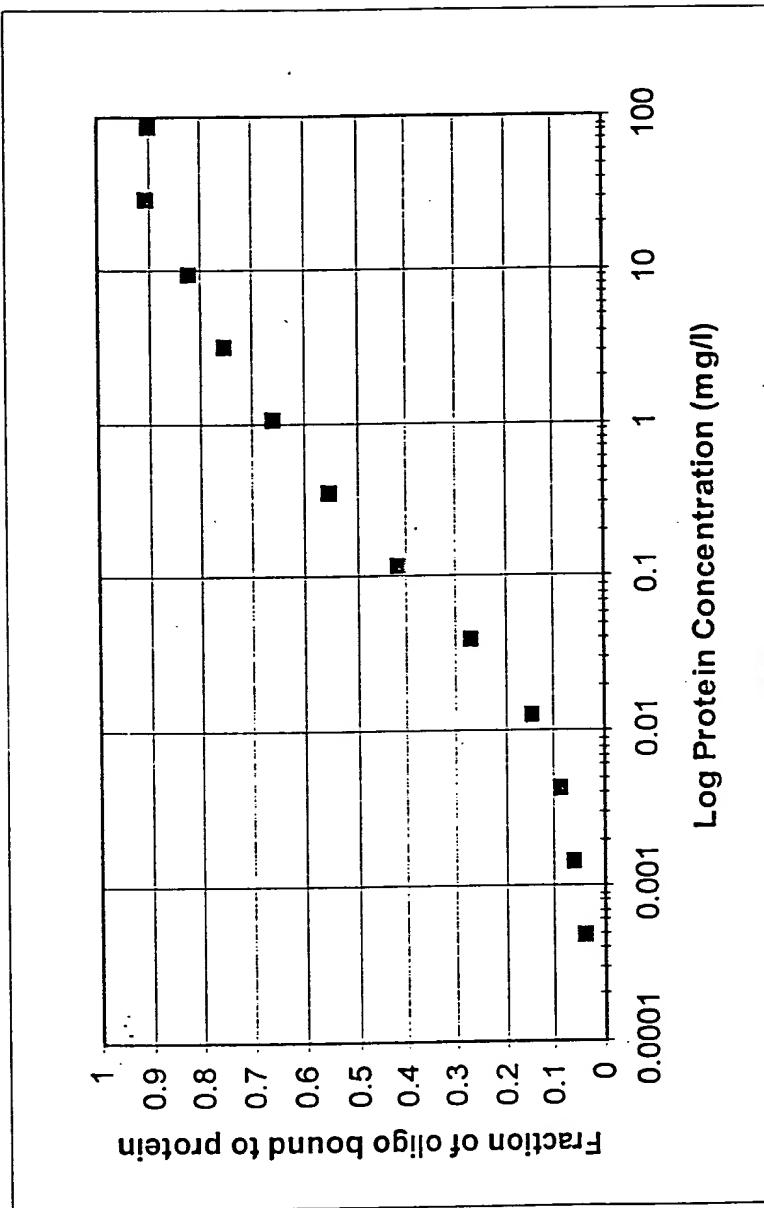


FIGURE 16

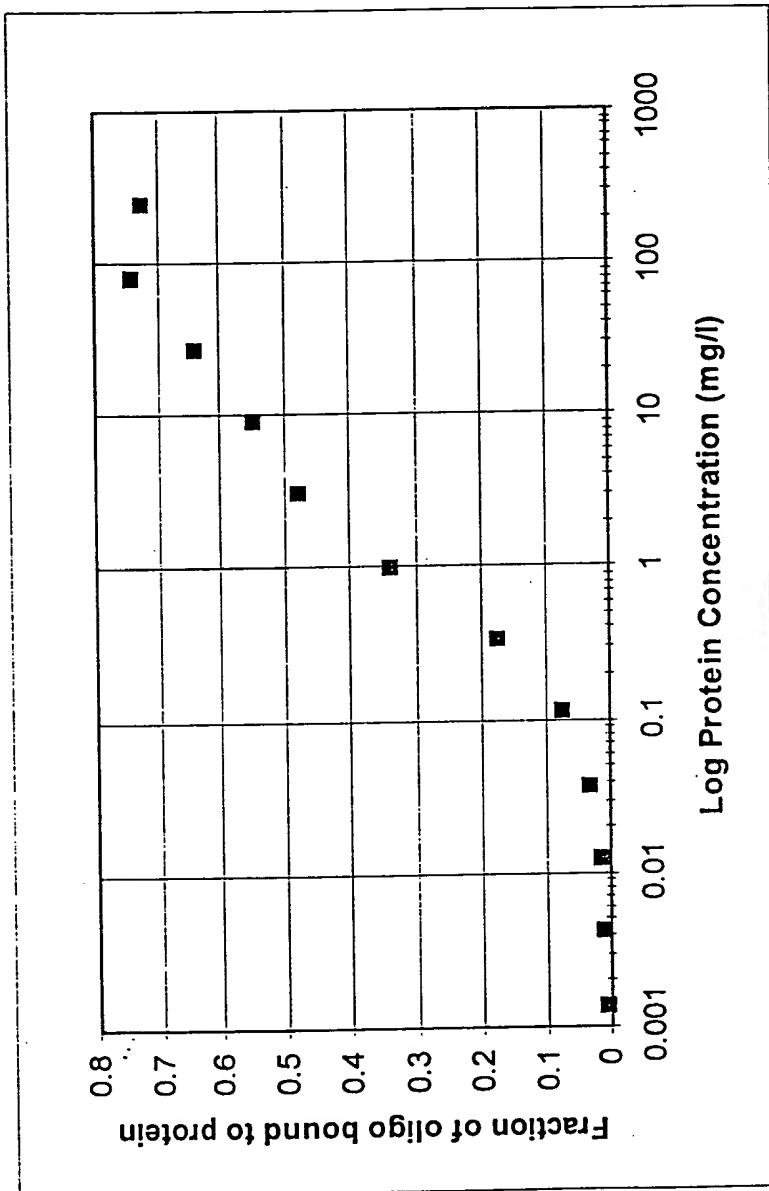
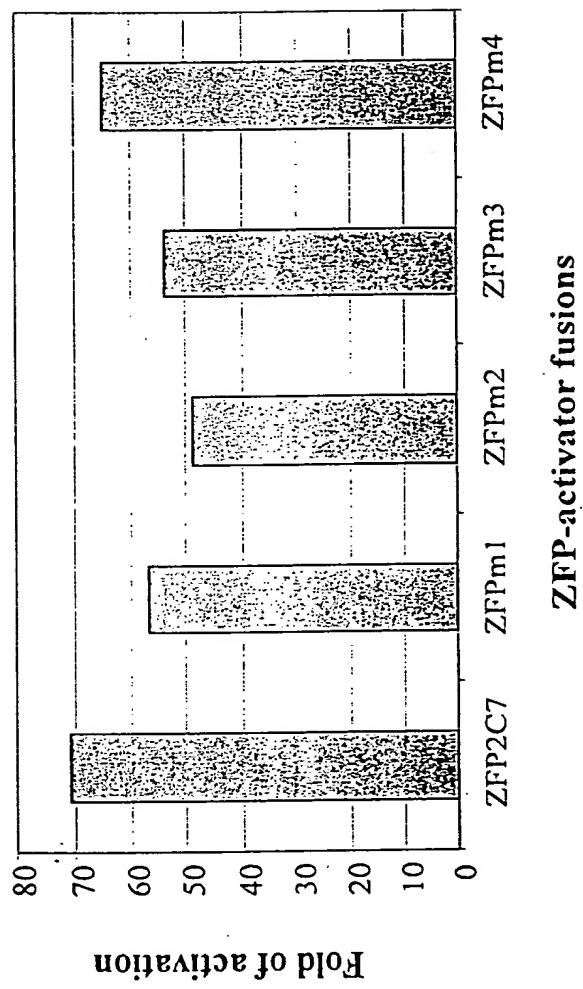
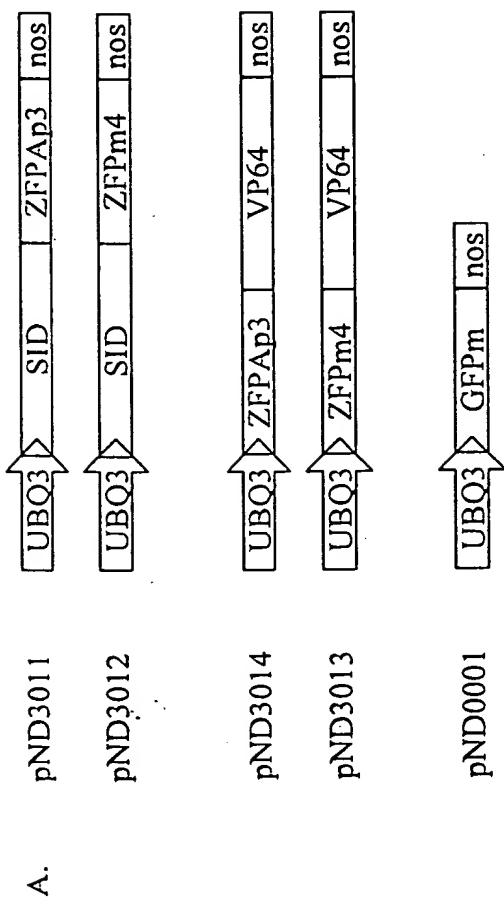


FIGURE 17

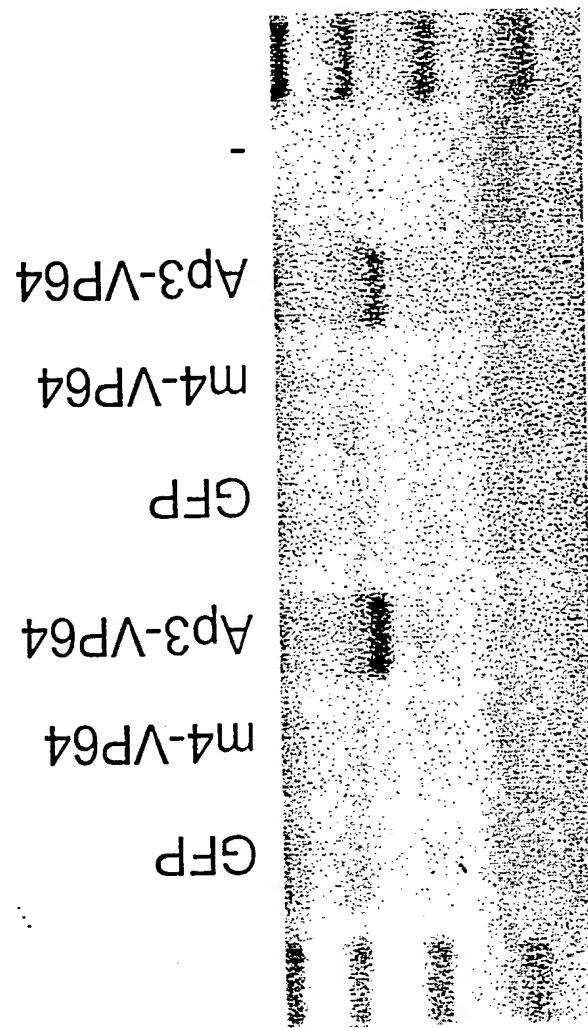




B.

- pND0051 pND3011 in plant transformation vector with Hygmicine as selection marker
- pND0052 pND3014 in plant transformation vector with Hygmicine as selection marker

FIGURE 19



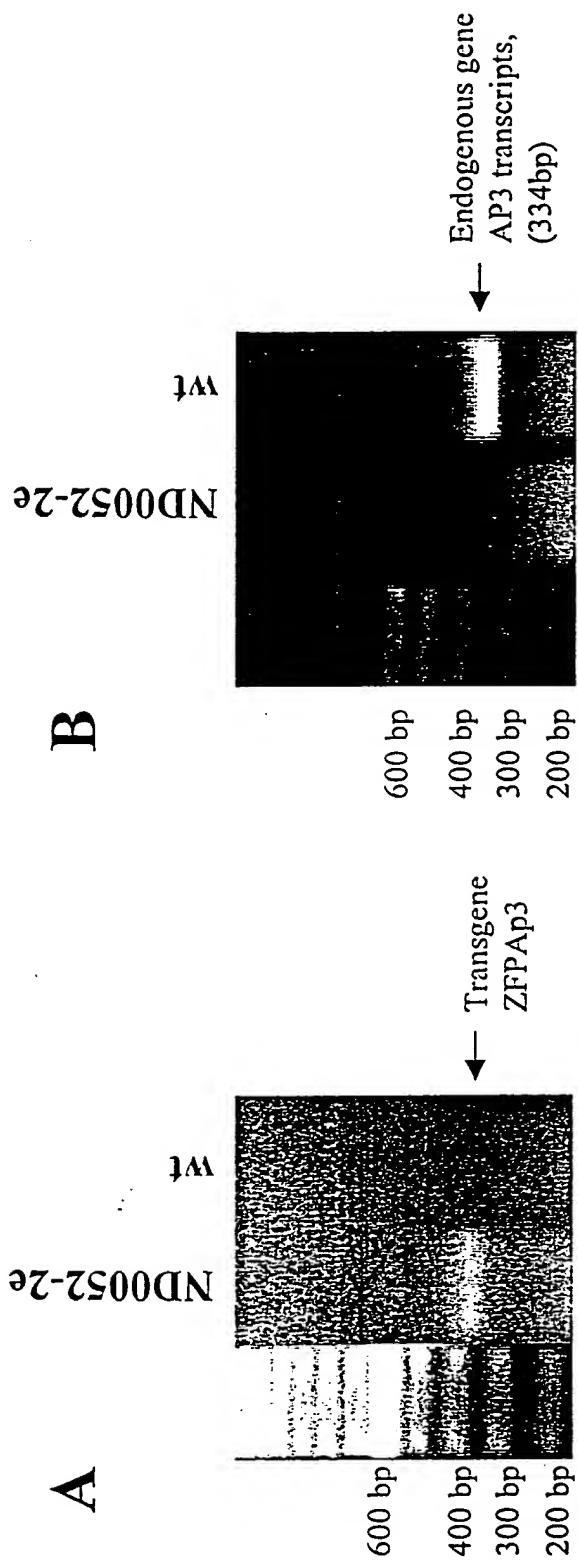
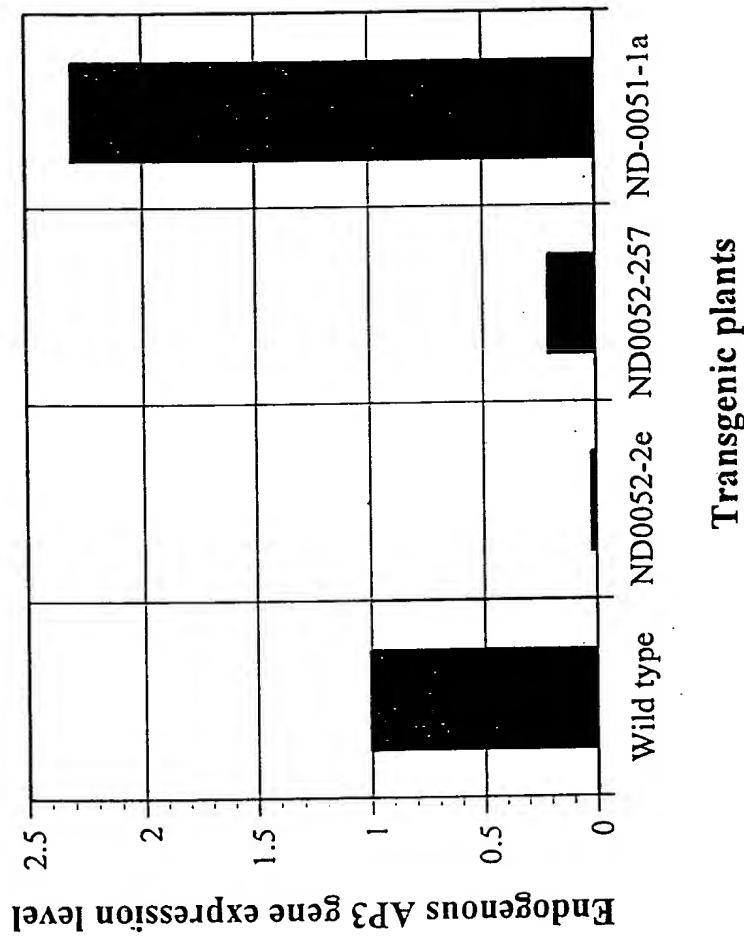


FIGURE 20

FIGURE 21



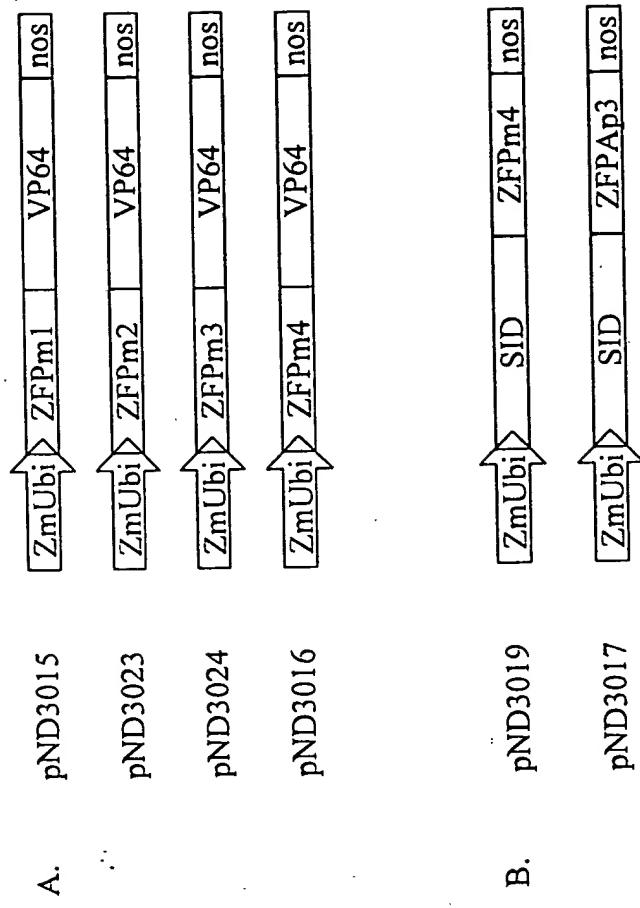


FIGURE 22

FIGURE 23

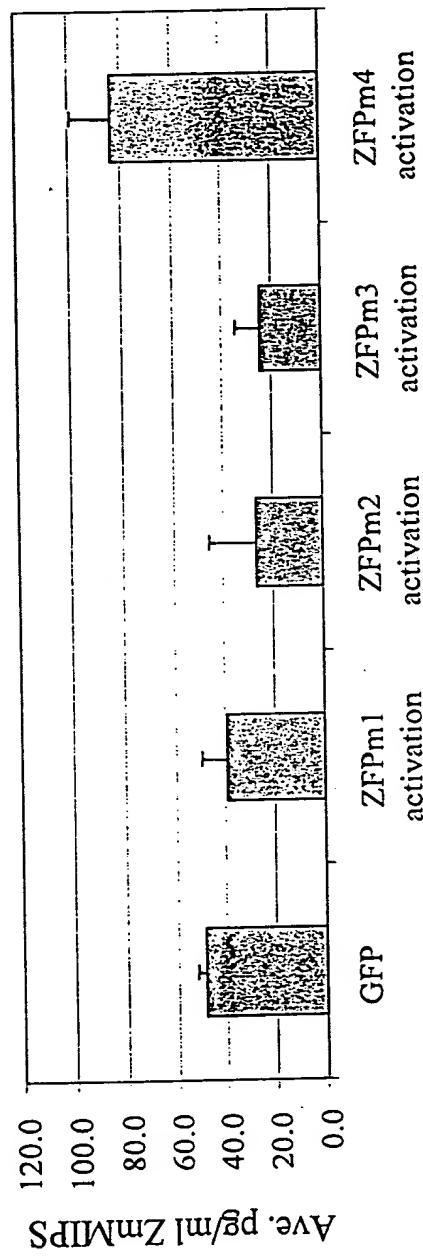


Figure 24

(1) Sequence of promoter CsVMV (Example 1A) (SEQ ID NO:1):

Tctagaaactagttccagaaggtaattatccaagatgttagcatcaagaatccaatgtttacggaaaaactatggaa
gtattatgtgagctagcaagaaggcagatcaatatgcggcacatatgcaacctatgtcaaaaatgaagaatgtacagatacaag
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ttcctatataaggaaaccaagtcggcatttgaaaacaagaaaaatttggtaagctatttcttgaagtactgaggatacaact
tcagagaaaatttgaagttgt

Total 531 bp

(2) Sequence of zinc finger protein 2C7 binding site (Example 1A) (SEQ ID NO:2):

GCG TGG GCG GCG TGG GCG

Total 18 bp.

(3) Sequence of promoter pc7rbTATA (Example 1A) (SEQ ID NO:3):

Cccgggtataataagctggcattccggactgttgtaaagccaccat

Total 51 bp.

(4) Sequence of pND3008 coding region (Example1B) (SEQ ID NO:4):

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ggaggagctcaagatccccgaattccccgatcgatccgc
ttagagtccgcattatacgcatacgatggatggatgg
tctatgttacttagatccggatggatgg
tac

Total:	3120 bp
ZmUbi promoter:	44 bp to 2026 bp
Six finger ZFP2C7:	2060 bp to 2588 bp
Nuclear localization signal:	2620 bp to 2641 bp
VP64 activation domain:	2641 bp to 2805 bp

HA epitope tag: 2805 bp to 2836 bp
Nos terminator: 2884 bp to 3164 bp

(5) Sequence of pND3018 coding region (Example 1B) (SEQ ID NO:5):

Total:	3068 bp
ZmUbi promoter:	44 bp to 2026 bp
SID repression domain:	2066 bp to 2173 bp
Nuclear localization signal:	2174 bp to 2194 bp
Six finger ZFP2C7:	2207 bp to 2735 bp
HA epitope tag:	2762 bp to 2791 bp
Nos terminator:	2820 bp to 3112 bp

(6) Sequence of 6X2C7 binding site (SEQ ID NO:6):

Total: 155 bp

(7) Sequence of 3 finger protein C7:

Atggcccaggcgccctcgagccctatgctgcctgtcgagtcctgcgatgcgcgtttctaagtccggctgatctg
aagcgccatatccgcatcccacacaggccagaagccctccagtgtcaatatgcatgcgtaaatcagtcgttagtgaccacccta
ccacccacatccgcacccacacaggcgagaagcccttgcctgtgacattgtgggaggaaagtttgccaggagtgtgaacgca
agaggcataccaaaatccatttaagacagaaggactctagaacttagtggccaggccggccaggctagc

Total: 314 bp

(8) Amino acid sequence of 3 finger protein C7:

Maqaalepyacpvescdrrfsksadlkrhirihtgqkpfqcricmrnfsrsdhltthirthtgekpfacdicgrkfar
sderkrhtkihlrqkdsrtsgqagqas

Total: 105 aa

(9) Sequence of zinc finger protein ZFPAp3 binding site:

GAT GGA GTT GAA GAA GTA

Total: 18 bp

(10) Sequence of zinc finger protein ZFPm1 and ZFPm2 binding site m12:

GCC TCC TTC CTC CTC TCA CTC

Total: 21 bp

ZFPm1 binding site: compliment strand of 1 to 18

ZFPm2 binding site: compliment strand of 4 to 21

(11) Sequence of zinc finger protein ZFPm3 and ZFPm4 binding site m34:

GCC AAC TAC TAC GGC TCC CTC ACC

Total: 21 bp

ZFPm3 binding site: compliment strand of 1 to 18

ZFPm4 binding site: compliment strand of 7 to 24

(12) Partial sequence of pMal-m1 (1-3300 bp) and zinc finger protein ZFPm1

(2719-3270 bp) (SEQ ID NO:14):

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cggtctgacaatctcgccggcaccacgtactcacccggtaaaaaacttagtggccaggccggccagtaccgtacgacgt
tccggactacgct

Total: 514 bp

Primer F1-f1 of ZFPm1: 2770 bp to 2850 bp

Primer F1-f2 of ZFPm1: 2740 bp to 2790 bp

Primer F2-f of ZFPm1: 2867 bp to 2940 bp

Primer F2-b of ZFPm1: 2824 bp to 2889 bp

Primer F3-b1 ZFPm1: 2916 bp to 2973 bp

Primer F3-b2 ZFPm1: 2953 bp to 3021 bp

Primer F4-f1 of ZFPm1: 3022 bp to 3102 bp

Primer F4-f2 of ZFPm1: 2992 bp to 3042 bp

Primer F5-f of ZFPm1: 3119 bp to 3192 bp

Primer F5-b of ZFPm1: 3076 bp to 3141 bp

Primer F6-b1 of ZFPm1: 3168 bp to 3225 bp

Primer F6-b2 of ZFPm1: 3205 bp to 3273 bp

(13) Sequence of zinc finger protein ZFPm1

(Translated from pMal-m1: 2719-3270 bp):

Aqaalepgekpyacpecgksfsdpghlvrhqrthtgekpykcpecgksfsqrahlerhqrthtgekpykcpec
gksfsqssnlvrhqrthtgekpyacpecgksfsrsdnlvrhqrthtgekpykcpecgksfsrsdnlvrhqrthtgekpykcpe
cgksfsqaghlashqrthtggkktsgqag

(14) Partial sequence of pMal-m2 (1-3300 bp) and zinc finger protein ZFPm2

(2719-3270 bp) (SEQ ID NO:15):

ccgacaccatcgaaatggcщаaacccttcgccgtatggcatgatagcgccccgaagagagtcaattcagggtgg
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cgatgaccatcaacggccgtggcatggccaacatgcacaccagcaaagtgaattatggtaacggactgcccaccc
agggtcaaccatccaaaccgttgcgtggcggttacccatggaaaacgcggcagtcgaacaaagagctggaaaaga
gttcctcgaaaactatctgtactgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgtt
tacgaggaagagttggcgaaagatccacgtattgcgcaccatggaaaacgcggcaggttgcgttgcgttgcgttgcgtt
cgccagatgtccgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgtt
aagacgcgcagactaattcgagctcaacaaacaacaataacaacacccatggatcgaggaaaggattcagaa
ttcggatccttcctgtggccaggcggccctcgagccggggagaagccctatgttgcgttgcgttgcgttgcgttgcgtt
tcagagcttcacctggcgccaccagcgtacccacacgggtgaaaacccgtataatgcggcaggtgcggcaatctttag
ccagtcagcaacctggcgccatcaacgcactcatactggcgagaagccatacaatgtccagaatgtggcaagtcttgc
cggtctgacaatctgtccggcaccacgtactcacccggggagaagccctatgttgcgttgcgttgcgttgcgttgcgtt
cgagcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgtt
cgagcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgtt
caggccggccacctggccagccatcaacgcactcatactggcgagaagccatacaatgtccagaatgtggcaagtcttgc
gttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgtt

cggctgacaatctcgccggcaccacgtactcacaccggtaaaaaactagtggccaggccggccagtacccgtacgacgt
tccggactacgct

Total: 514 bp

Primer F1-f1 of ZFPm2: 2770 bp to 2850 bp

Primer F1-f2 of ZFP m2: 2740 bp to 2790 bp

Primer F2-f of ZFP m2: 2867 bp to 2940 bp

Primer F2-b of ZFPm2: 2824 bp to 2889 bp

Primer F3-b1 ZFPm2: 2916 bp to 2973 bp

Primer F3-b2 ZFPm2: 2953 bp to 3021 bp

Primer F4-f1 of ZFPm2: 3022 bp to 3102 bp

Primer F4-f2 of ZFPm2: 2992 bp to 3042 bp

Primer F5-f of ZFPm2: 3119 bp to 3192 bp

Primer F5-b of ZFPm2: 3076 bp to 3141 bp

Primer F6-b1 of ZFPm2: 3168 bp to 3225 bp

Primer F6-b2 of ZFPm2: 3205 bp to 3273 bp

(15) Partial sequence of pMal-m3 (1-3300 bp) and zinc finger protein ZFPm3

(2719-3270 bp) (SEQ ID NO:16):

ccgacaccatcgaaatggcggaaaacccattcgcggatggcatgatgcgcggaaagagagtcattcagggtgg
aatgtgaaaccagtaacgttatacgatgtcgccaggatgcgggtctttatcagaccgtttcccggtggtaaccaggcca
gccacgttctgcggaaaacgcggggaaaagtggaaagcggcgtggcgagctgaattacattccaaaccgcgtggcacaaca
actggcgaaacacgtcggtgtgattggcggtgccaccctccagtcggccctgcacgcgcgtcgcaatttgcgcggcgt
taaatctcgccgatcaactgggtgccagcgtgggtgtcgatggtagaaacgaagcggcgtcgaaacgcctgtaaacgcggc
gtgcacaatctctcgccgcaacgcgtcagtggctgtatccaactatccgctggatgaccaggatgccattgtgtggaaagctg
cctgcactaatgtccggcgatattctgtatgtctcgaccagacacccatcaacagtattttctccatgaagacggtacgcga
ctggcggtggagcatctggcgatgggtcaccagcaaatcgccgttgcggccattaaagtctgtctcgccgtctgc
gtctggctggcataaatatctactcgcaatcaaattcagccgatagcggaaacgggaaaggcgtggactgcatgtccg
gtttcaacaaaccatgcaaatgtgaatgagggcatcgccactcgcatgtggtagtggatacgacgataccgaagacagctcat
aatgcgcgcattaccgagtcgggtcgccgtggcgatatctcggtatgtggatacgacgataccgaagacagctcat
gttataatccgcccgttaaccaccatcaaacaggatccgcctgctggggcaaaaccagcgtggaccgctgtgcactctcag

ggccaggcggtgaagggaatcagctgtgcccgtcactggtaaaaagaaaaaccaccctggcgcccaatacgcaaacgc
cctctccccgcgcgttggccgattcattaatgcagctggcacgacaggttccgactggaaagcgggcagtgagcgaacgc
aattaatgtgagtttagtcactcattggcacaattctcatgtttgacagcttatcatcactgcacgggcaccaatgctctggcg
caggcagccatcggaaagctgtgtatggctgtgcaggcgtaaatcactgcataattcgtgtcgctcaaggcgcactccgtct
ggataatgttttgcggacatcataacggttcggcaaatattctgaaatgagctgtgacaattaatcatcggctgtataatgt
gtggaaattgtgagcggataacaattcacacaggaaacagccagtcgttaggtttcacgagcacttcaccaacaaggacc
atagattatgaaaactgaagaaggtaactgtaatctggattaacggcataaaggctataacggctcgtgaagtggtaag
aaattcgagaaagataccggaattaaagtccatcggataactggaaagagaaattcccacagggtggcaact
ggcgatggccctgacattatctctggcacacgaccgcttggctacgctcaatctggctgtggctgaaatccccgg
acaaaggcggtccaggacaagctgtatccgttacctggatggctacgtacaacggcaagctgattgcttacccgatcgctt
gaagcggttacgctgatttataacaaagatctgctggcaacccggcaaaaacctggaaagagatccggcgctggataaagaa
ctgaaagcgaaaggtaaagagcgcgtgatgtcaacctgcaagaaccgtacttcacctggcgctgattgctgacgggggt
tatcggtcaagtatgaaaacggcaagtacgacattaaagacgtggcggtggataacgctggcgcaagcgggtctgaccctc
ctgggtgacctgattaaaaacaaacacatgaatgcagacaccgattactccatcgcaagctgccttaataaaggcgaaacag
cgatgaccatcaacggccgtggcatggccaacatcgacaccaggcaagtgaaltatggtaacggactgcccaccc
agggtcaaccatccaaaccgttcgtggcgctgagcgcaggattacgcccgtccgaacaaagagctggcaaaaga
gttcctcgaaaactatctgctgactgatgaaggctggaagcggtaataaagacaaaccgtggcgctgacggctgaaatct
tacgaggaagagttggcgaaagatccacgtattgcccaccatggaaaacgcccagaaaggtaatcatggcaacatcc
cgccagatgtccgttctggatgcccgtactcggtgatcaacgcccagcggcgctcagactgtcgatgaccc
aagacgcgcagactaattcgagctgaacaacaacaataacaacaccgtggatcgaggaaaggattcagaa
ttcggtccttcctctgtggccaggcgccctcgagccggggagaagccctatgctgtccggaatgtggtaagtcc
gcgatcctggccacctggatgcccaccagcgtacccacacgggtaaaaaccgtataaattgcccagactgccc
gcaccagcgccctggatgcccaccagcgtacccacacgggtaaaaaccgtataaattgcccagactgccc
gcgcaggcgtccctggatgcccaccagcgtacccacacgggtaaaaaccgtataaattgcccagactgccc
gcgcaggcgtccctggatgcccaccagcgtacccacacgggtaaaaaccgtataaattgcccagactgccc
agtgactgcccgcgacccgtcgccatcaacgcactcatactggcgagaagccataaaatgtcc
ccaaatccagccatctgtccggaccaacgtactcacaccggtaaaaaactagtggccaggccggcc
gttccggactacgt

Total: 514 bp

Primer F1-f1 of ZFPm3: 2770 bp to 2850 bp

Primer F1-f2 of ZFP m3: 2740 bp to 2790 bp

Primer F2-f of ZFP m3: 2867 bp to 2940 bp

Primer F2-b of ZFPm3: 2824 bp to 2889 bp

Primer F3-b1 ZFPm3: 2916 bp to 2973 bp

Primer F3-b2 ZFPm3: 2953 bp to 3021 bp

Primer F4-f1 of ZFPm3: 3022 bp to 3102 bp

Primer F4-f2 of ZFPm3: 2992 bp to 3042 bp

Primer F5-f of ZFPm3: 3119 bp to 3192 bp

Primer F5-b of ZFPm3: 3076 bp to 3141 bp

Primer F6-b1 of ZFPm3: 3168 bp to 3225 bp

Primer F6-b2 of ZFPm3: 3205 bp to 3273 bp

(16) Partial sequence of pMal-m4 (1-3300 bp) and zinc finger protein ZFPm4

(2719-3270 bp) (SEQ ID NO:17):

ccgacaccatcgaatggcщаaccccttcgcggatggcatatgcgcggaaagagagtcaattcagggtgg
aatgtgaaaccagtaacgttatacgtatgtcgagatgtccgtgtctttatcagaccgttcccgctggtaaccaggcca
gccacgttctgcgaaaacgcggaaaaagtggaaagcggcatggcggagctgaattacattccaaaccgcgtggcacaaca
actggcggcaaacagtcgttgctgattggcgttgccacccctcagtcgttgcacgcgcgtcgcaattgtcgccgat
taaatctcgccgatcaactgggtgccagcgtgggtgtcgatggtagaaacgaagcggcgtcaagcctgtaaagcggcg
gtgcacaatttctcgccgcaacgcgtcagtggtgtcatcaactatccgtggatgaccaggatgccattgtggaaagctg
cctgcactaatgttccggcgtattctgtatgtctgaccagacacccatcaacagtattttctccatgaagacggtacgcga
ctggcgtggagcatctggcgttgggtcaccagcaaatcgcgtttagcggccattaagttctgtctcgccgtctgc
gtctggctggcataaatatctactcgcaatcaaattcagccatagcggaaacgggaaggcactggagtgccatgtccg
gtttcaacaaccatgcaaatgctgaatgagggcatcgttccactgcgtggatggccaaacccatcaacgcgttgc
aatgcgcgcattaccgagtcggcgtgcgttggatctcggtatgtggtagtggatgcacgatccaaacgcgtcat
gttataatccgcgttaaccaccatcaaacaggatttcgccctgtggggcaaaccagcgtggaccgcgttgc
ggccaggcggtaaggcaatcagctgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgc
ccttcggccgttggccgattcattaatgcagctggcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgc
aattaaatgtgagttactcattaggcacaattctcatgtttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgc
caggcagccatcggaaagctgtggatggctgtcaggcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgc
ggataatgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgcgttgc

gtggattgtgagcggataacaattcacacagaaacagccagtccgttaggtttcacgagcactcaccaacaaggacc
atagattatgaaaactgaagaaggtaactggtaatctggattaacggcgataaaggctataacggctcgctgaagtccgtaag
aaattcgagaaagataccgaaattaaagtccgttgcggatccgataaactggagagaaattcccacagggtcggcaact
ggcgtggccctgacattatcttctggcacacgaccgcgttggctacgctcaatctggctgtggctgaaatccccgg
acaaagcgttccaggacaagctgtatccgttacctggatggcgatcacaacggcaagctgattgcttacccgatcgctgtt
gaagcgttacgctgattataacaaagatctgtccgaacccgccaacccctggagagatcccgccgtggataaagaa
ctgaaagcgttccaggtaagagcgcgtatgttcaacctgcaagaaccgtacttcacccgtgtgctgacgggggt
tatcggttcaagtatgaaaacggcaagtacgacattaaagacgtggcggtggataacgctggcgaaagcgggtctgaccitc
ctgggttgcctgattaaaacaaacatgaatgcagacaccgattactccatcgccagaagctgccttaataaaggcgttac
cgatgaccatcaacggccgtggcatggtccaacatcgacaccagcaagtgaattatggtaacggtactggcgttac
agggtcaaccatccaaaccgttcgttggcgatcgccgttacccgttacccgttacccgttacccgttacccgttac
gttccctgaaaactatcgactgttacttgcgactgttacttgcgactgttacttgcgactgttacttgcgactgttact
tacgaggaagagttggcgttacccgttacccgttacccgttacccgttacccgttacccgttacccgttacccgttac
cgccatcgccgttccctgtggcccgccgttacccgttacccgttacccgttacccgttacccgttacccgttacccgttac
aagacgcgcagactaattcgactgttacttgcgactgttacttgcgactgttacttgcgactgttacttgcgactgttact
ttcggttccctgtggcccgccgttacccgttacccgttacccgttacccgttacccgttacccgttacccgttacccgttac
ggccatcgccgttccctgtggcccgccgttacccgttacccgttacccgttacccgttacccgttacccgttacccgttac
actgttacttgcgactgttacttgcgactgttacttgcgactgttacttgcgactgttacttgcgactgttacttgcgactgttact
tcagactcttcgttacttgcgactgttacttgcgactgttacttgcgactgttacttgcgactgttacttgcgactgttacttgcgactgttact
ccgcagcgataacctggcgccatcaacgcactcatactggcgagaagccatacaatgtccagaatgtggcaagtcttc
acttcaggccattggcgccatcaacgtactcacaccgtaaaaactgtggccaggccggccagtagccgttacccgttacccgttac
ccggactacgt

Total: 514 bp

Primer F1-f1 of ZFPm4: 2770 bp to 2850 bp

Primer F1-f2 of ZFPm4: 2740 bp to 2790 bp

Primer F2-f of ZFPm4: 2867 bp to 2940 bp

Primer F2-b of ZFPm4: 2824 bp to 2889 bp

Primer F3-b1 ZFPm4: 2916 bp to 2973 bp

Primer F3-b2 ZFPm4: 2953 bp to 3021 bp

Primer F4-f1 of ZFPm4: 3022 bp to 3102 bp
Primer F4-f2 of ZFPm4: 2992 bp to 3042 bp
Primer F5-f of ZFPm4: 3119 bp to 3192 bp
Primer F5-b of ZFPm4: 3076 bp to 3141 bp
Primer F6-b1 of ZFPm4: 3168 bp to 3225 bp
Primer F6-b2 of ZFPm4: 3205 bp to 3273 bp

(17) Partial sequence of pMal-Ap3 (1-3300 bp) and zinc finger protein ZFPAp3

(2719-3270 bp) (SEQ ID NO:18):

ccgacaccatcaatggtcaaaaccccttcgcggatggcatgatgcgcgggaagagagtcaattcagggttgt
aatgtgaaaccaggtaacgttatacgatgtcgccagatgtccgggtgtctttatcagaccgtttcccggttgtgaaccaggcca
gccacgttctcgaaaaacgcggggaaaagtggaaagcggcgatggcgaggctgaattacattccaaaccgcgtggcacaaca
actggcgggcaaacagtcgttgcattggccatccactctggccacccactgtcgcgcgtcgcacattgtcgccggcgat
taaatctcgccgatcaactgggtgccagcgtgggtgtcgttgttgcataactatccgcgtggatgaccaggatgcattgtggaaagctg
gtgcacaatcttcgcgcacgcgtcagtggctgtcattaaactatccgcgtggatgaccaggatgcattgtggaaagctg
cctgcactaatgttccggcgatatttcttgcgtctgcaccagacacccatcaacagtattttctccatgaagacggtacgcga
ctgggcgtggagcatctggcgtcattgggtcaccagcaatcgccgttgcgttgttgcattaaactatccgcgtggatgaccaggatgcattgtgg
gtctggctggctggcataaatatctcactcgcaatcaaattcagccgatagcggaaacgggactggatgtccatgtcc
gtttcaacaaaccatgcaatgtgaatgagggcatcgccactgcgttgttgcattaaactatccgcgtggatgaccaggatgcattgtgg
aatgcgcgcattaccgagtcgggtgcgttgtgcggatatctggtagtggatgacgacgataccgaagacagactcat
gttatatccgcgttaaccaccatcaaacaggatttcgccgtctcactggtagaaagaaaaaccaccctggcccaatacgc
ggccaggcggtaagggcaatcagctgttgcgcgttgtgcggatatctggtagtggatgacgacgataccgaagacagactcat
cctcccccgcgtggccattaaatgcagctggcgcgttgtgcggatatctggtagtggatgacgacgataccgaagacagactcat
aattatgtgagttgcgtcactcattggcacaattctcatgtttgacagcttcatcgactgcacggcgttgcaccaatgc
ggccaggcgttgtgcggatataccggatataccggatataccggatataccggatataccggatataccggatataccgg
ggataatgttgcgttgtgcggatataccggatataccggatataccggatataccggatataccggatataccggatataccgg
atgattatgaaaactgaagaaggtaactggtaatctggattaacggcgataaaggctataacggctcgctgaagtgc
aaattcgagaaagataccggatataaggcaccgttgagcatccggataaactggaaagagaaaattccacagggtgcggcaact
ggcgttgtccgtacattatctggccacacgaccgcttggctacgctcaatctggctgtggctgaaatcacccgg
acaaagcgttccaggacaagctgtatccgtttacctggatgccgtacgtacaacggcaagctgattgcttacccgatcgctt

gaagcgttatcgctgattataacaaagatctgctgccgaacccgcacaaaacctggaaagagatcccgcgctggataaaagaa
ctgaaagcgaaaggtaagagcgccgtatgttcaacctgcaagaaccgtacttcacctggccgctgattgctgctgacgggggt
tatgcgttcaagtatgaaaacggcaagtacgacattaaagacgtggcgatggataacgcgtggcgcaagcggtctgaccitc
ctgggtgacctgattaaaacaaacatgaatgcagacaccgattactccatcgccagaagctgccttaataaaggcgaaacag
cgatgaccatcaacggccgtggcatggtccaacatcgacaccagcaaagtgaattatggtaacggtactggcaccitca
agggtcaaccatccaaaccgtcggtggcgatggcgaggattaaacgcgcagtcgaaacaaagagctggcaaaaga
gttcctcgaaaactatcgctgactgtgaaggctggaagcggttaataaagacaaaccgtgggtccgtagcgtgaagtct
tacgaggaagagtggcgaaagatccacgtattgcgcaccatggaaaacgcggagaaaggtgaaatcatgccgaacatcc
cgccagatgtccgcttctggatgcgtgcgtactgcggatcaacgcgcagcggtcgactgtcgatgaagccctga
aagacgcgcagactaattcgagctcgacaacaacaataacaataacaaccctcggtatcgagggaggattcagaa
ttcggatcccttcctctgtggccaggcgccctcgagccggggagaagccctatgttgcggatgtggtaagtccctca
gccagagcagctccctggcgccaccagcgtacccacacgggtgaaaaccgtataaatgcgcagatgtggcaagtcttc
agccagtccagcaacctggcgccatcaacgcactcatactggcgagaagccatacaatgtccagaatgtggcaagtcttc
agccagcggccaccctggacgcaccatcaacgcactcatactggcgagaagccatacaatgtccagaatgtggcaagtcttc
ctcaacttcaggcaactggccgtaccaacgtactcacaccggtaaaaaactagtggccaggccggcagtagccgtacga
cggtccggactacgct

Total: 514 bp

Primer F1-f1 of ZFPAp3: 2770 bp to 2850 bp

Primer F1-f2 of ZFPAp3: 2740 bp to 2790 bp

Primer F2-f of ZFPAp3: 2867 bp to 2940 bp

Primer F2-b of ZFPAp3: 2824 bp to 2889 bp

Primer F3-b1 ZFPAp3: 2916 bp to 2973 bp

Primer F3-b2 ZFPAp3: 2953 bp to 3021 bp

Primer F4-f1 of ZFPAp3: 3022 bp to 3102 bp

Primer F4-f2 of ZFPAp3: 2992 bp to 3042 bp

Primer F5-f of ZFPAp3: 3119 bp to 3192 bp

Primer F5-b of ZFPAp3: 3076 bp to 3141 bp

Primer F6-b1 of ZFPAp3: 3168 bp to 3225 bp

Primer F6-b2 of ZFPAp3: 3205 bp to 3273 bp

(18) Sequence of oligo m12 (SEQ ID NO:19):

Biotin-GGa gcc tcc ttc ctc ctc tca ctc GGG TTTT CCC gag tga gag gag gaa gga
ggc tCC

Total: 58 bp

Lower case sequence: ZFPm1 and ZFPm2 binding site m12

(19) Sequence of oligo m34 (SEQ ID NO:20):

Biotin-GGa gcc aac tac tac ggc tcc ctc acc GGG TTTT CCC ggt gag gga gcc gta
gta gtt ggc tCC

Total: 58 bp

Lower case sequence: ZFPm3 and ZFPm4 binding site m34

(20) Sequence of oligo Ap3 (SEQ ID NO:21):

Biotin-GGt tac ttc aac tcc atc GGG TTTT CCC gat gga gtt gaa gaa gta aCC

Total: 52 bp

Lower case sequence: ZFPAp3 binding site

(21) Sequence of oligo NRI-1 (SEQ ID NO:22):

Biotin-GG ttc tac ccc tcc cac cgc GGG TTTT CCC gcg gtg gga ggg gta gaa CC

Total: 51 bp

(22) Sequence of oligo NRI-2 (SEQ ID NO:23):

Biotin-GG tgc ggc gac tgc agc agc GGG TTTT CCC gct gct gca gtc gcc gca CC

Total: 51 bp

(23) Sequence of oligo hHD-I (SEQ ID NO:24):

Biotin-GG ggc ccc gcc tcc gcc ggc GGG TTTT CCC gcc ggc gga ggc ggg gcc
CC

Total: 51 bp

(24) Sequence of oligo hHD-II (SEQ ID NO:25):

Biotin-GG ggc agc ccc cac ggc gcc GGG TTTT CCC ggc gcc gtc ggg gct gcc CC

Total: 51 bp

(25) Sequence of oligo c5p1-g (SEQ ID NO:26):

Biotin-GG gac acc ccc aac ccc gcc GGG TTTT CCC ggc ggg gtt ggg ggt gtc CC

Total: 51 bp

(26) Sequence of oligo c5p3-g (SEQ ID NO:27):

Biotin-GG ctc tgc tca tcc cac tac GGG TTTT CCC gta gtc gga tga gca gag CC

Total: 51 bp

(27) Sequence of oligo B3c2 (SEQ ID NO:28):

Biotin-GG acc cac cgc gtc ccc tcc GGG TTTT CCC gga ggg gac gcg gtc ggt CC

Total: 51 bp

(28) Sequence of oligo e2c-g (SEQ ID NO:29):

Biotin-GG cac tgc ggc tcc ggc ccc GGG TTTT CCC ggg gcc gga gcc gca gtc CC

Total: 51 bp

(29) Sequence of primer Ap3-F (SEQ ID NO:30):

GGCGAGAGGGAAAGATCCAG

Total: 19 bp

(30) Sequence of primer NZlib5' (SEQ ID NO:31):

GGCCCAGGCAGGCCCTCGAGC

Total: 20 bp

(31) Sequence of primer Ap3f4-R (SEQ ID NO:32):

CTCCTCTAATACGACTCACTATAGGGACACTCACCTAGCCTCTG

Total: 44 bp

(32) Sequence of primer m4f3-R (SEQ ID NO:33):

CCTCGCAAGATCACGACAATC

Total: 21 bp

(33) Sequence of quantitative PCR probe for AP3 (SEO ID NO:34):

CCATTTCATCCTCAAGACGACGCAGCT

Total: 27 bp

(34) Sequence of quantitative PCR primer for AP3 (Forward) (SEQ ID NO:35):

TTTGGACGAGCTTGACATTGAG

Total: 22 bp

(35) Sequence of quantitative PCR primer for AP3 (Reverse) (SEQ ID NO:36):

CGCGAACGAGTTGAAAGTG

Total: 20 bp

(36) Sequence of 2C7-SJD (Figure 3) (SEQ ID NO:66):

gaataaggcgacacggaaatgttaactcatactttccctttcaatattattgaagcattatcagggttattgtctcatgagcg
gatacatattgaatgtatttagaaaataacaaatagggtccgcgcacattccccgaaaagtgccacactgacgtc